Computer Programming

Department Software Engineering

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Assignment Number 1: Problem Solving

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1)Finding the Shortest Path

Dijkstra's algorithm

STEP1: Start

STEP2: Create a graph f all location and assign the roads connecting them**(input)**

A-B (2 MILES)

A-C (3 MILES)

B-E (2 MILES)

C-D (1 MILE)

D-E (1 MILE)

STEP3: Initialize **a** priority queue

Step 4: Add a starting location (A) with distance (0)

- Remove the location with smallest distance from priority queue
- If the removed location is the destination (E) stop algorithm

Step 5: print shortest path (**OUTPUT**)

STEP 6: End

2) Algorithm for sorting a list of numbers in ascending order

Step 1: start

Step 2: Take integer as int i and its value I gave it is 1**(input)**

Step 3: Apply loop on it such as do while and increment operator on it and condition of while loop should be **i<=10**

Step 4: Print the program**(output)**

Step 5: END

3) Algorithm for calculating Fibonacci numbers

Step 1: start

Step 2: initially take int solve(int(n)

Step 3: apply condition such as

if(n==0)

return 0;

if(n==1)

return 1;

Step 4: After applying condition write formula { solve(n-1) + solve (n-2)}

Step 5: Take n (**input**)

Step 6: display solve(n)(**OUTPUT**)

Step 7: End

4) Algorithm for inventory management

1. Start
2. Define the following variables:
    - Stock: The amount of inventory currently in stock.
    - Threshold: The minimum amount of inventory that should be in stock before placing a new order.
    - Reorder quantity: The amount of inventory to order when the stock level falls below the threshold.
3. Monitor the stock level.
4. When the stock level falls below the threshold, place a new order for the reorder quantity.
5. Receive the new order and update the stock level.s
6. Repeat steps 2-4.
7. End